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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 4239-64830	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US03/20498	International filing date *(day/month/year)* 27 June 2003 (27.06.2003)	Priority date *(day/month/year)* 28 June 2002 (28.06.2002)

International Patent Classification (IPC) or national classification and IPC

IPC(7): C12N 9/24, 15/10, 15/55, 15/63; C07H 21/04 and US Cl.: 435/252.3, 252.33, 320.1, 325, 350, 351, 352

Applicant

THE GOVERNMENT OF THE UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY OF THE DEPARTMENT OF

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1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

    ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

    These annexes consist of a total of ___ sheets.

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3. This report contains indications relating to the following items:

   I   ☒ Basis of the report

   II ☐ Priority

   III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability

   IV ☐ Lack of unity of invention

   V   ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI ☐ Certain documents cited

   VII ☐ Certain defects in the international application

   VIII ☐ Certain observations on the international application

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Date of submission of the demand 16 December 2003 (16.12.2003)	Date of completion of this report 29 September 2004 (29.09.2004)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Brulgero J. Hines Telephone No. (571) 272-1600

Form PCT/IPEA/409 (cover sheet)(July 1998)

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed.

☒ the description:
pages <u>1-57</u> as originally filed
pages <u>NONE</u>, filed with the demand
pages <u>NONE</u>, filed with the letter of _____.

☒ the claims:
pages <u>58-61</u>, as originally filed
pages <u>NONE</u>, as amended (together with any statement) under Article 19
pages <u>NONE</u>, filed with the demand
pages <u>NONE</u>, filed with the letter of _____.

☒ the drawings:
pages <u>1-6</u>, as originally filed
pages <u>NONE</u>, filed with the demand
pages <u>NONE</u>, filed with the letter of _____.

☒ the sequence listing part of the description:
pages <u>1-9</u>, as originally filed
pages <u>NONE</u>, filed with the demand
pages <u>NONE</u>, filed with the letter of _____.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☒ contained in the international application in printed form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages <u>NONE</u>
☐ the claims, Nos. <u>NONE</u>
☐ the drawings, sheets/fig <u>NONE</u>

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*
** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

V.	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims	1-35	YES
	Claims	NONE	NO
Inventive Step (IS)	Claims	1-35	YES
	Claims	NONE	NO
Industrial Applicability (IA)	Claims	1-35	YES
	Claims	NONE	NO

2. CITATIONS AND EXPLANATIONS

Claims 1-35 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the claimed invention.

Claims 1-35 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.